

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF TEXAS  
MARSHALL DIVISION**

NATIONAL OILWELL DHT, L.P.,	§	
Plaintiff,	§	
	§	
v.	§	CIVIL ACTION NO. 2-14-1020
	§	
AMEGA WEST SERVICES, LLC,	§	
Defendant.	§	

**MEMORANDUM AND ORDER  
ON CLAIM CONSTRUCTION**

This patent case is before the Court for construction of the disputed claim terms in United States Patents No. 6,279,670 (“the ’670 Patent”), No. 6,431,294 (“the ’294 Patent”), and No. 6,508,317 (“the ’317 Patent”) (collectively, the “Patents-in-Suit”). The ’670 Patent issued August 28, 2001. The ’294 Patent, which is not in the ’670 Patent family, issued the following year, August 13, 2002. The application for the ’317 Patent was filed August 20, 2001, and the patent issued January 21, 2003. The ’317 Patent is a divisional of, and shares a common specification with, the ’670 Patent. Plaintiff National Oilwell DHT (“NOV”) alleges that Defendant Amega West Services, LLC (“Amega West”) is infringing the Patents-in-Suit by its AmegaVIBE product.

The Court conducted a hearing pursuant to *Markman v. Westview Instruments, Inc.*, 517 U.S. 370 (1996) (“*Markman* hearing”), on March 5, 2019, and the parties

provided supplemental briefing and oral argument thereafter. Based on the evidence before the Court, the arguments presented by counsel orally and in writing, and the governing legal authorities, the Court issues this Memorandum and Order construing those disputed claim terms that require construction.<sup>1</sup>

## **I. BACKGROUND**

The Patents-in-Suit are directed to vibration tools for use in drilling operations. Vibration tools are used to create vibratory forces “to reduce friction as a drill string is moved within a bore and/or vary the downward force exerted on a drill bit (sometimes called the ‘weight on bit’) to vary the depth of cut provided by the drill bit.” Plaintiff’s Written Tutorial [Doc. # 41], p. 1.

The Patents-in-Suit disclose vibration tools<sup>2</sup> that use “a drive system that includes a positive displacement motor (sometimes referred to as a ‘PDM’) to drive a specially constructed valve assembly that is tailored for use with a PDM.” *Id.* at 4. As the PDM rotates, it rotates and moves side to side. *See id.* “[B]ecause the speed of a PDM is proportional to the rate of flow of fluid through the PDM, the frequency

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<sup>1</sup> Additionally, the Court adopts the parties’ agreed construction of the claim terms set forth at ECF Document # 51-1, pp. 1-7.

<sup>2</sup> The ’670 Patent and the ’317 Patent refer to the vibration tool as a “downhole flow pulsing apparatus.” *See, e.g.,* ’670 Patent, Abstract; ’317 Patent, Abstract. The ’294 Patent refers to the vibration tool as a “percussion drill.” *See, e.g.,* ’294 Patent, Abstract.

of the vibrations produced by the tool of the [Patents-in-Suit] can be controlled by varying the rate of fluid flow through the tool.” *Id.* at 5.

The Patents-in-Suit describe a PDM rotor coupled to a movable valve plate, which interacts with a stationary plate. *Id.* at 6. Each plate defines (*i.e.*, contains) an opening through which fluid can pass. *See id.* As the PDM rotor moves the movable plate relative to the stationary plate, the overlap between the openings of the two plates will vary the flow of fluid through the valve. *See id.* The variations in fluid flow through the overlapping openings of the valve produce varying drilling fluid pressures that can be used to create desired vibrations. *See id.*

An additional feature of the Patents-in-Suit is that the vibration tools “include a PDM and valve assembly that can optionally be used with a separate pressure responsive device that expands and/or retracts in response to the varying fluid pressure created by the varying fluid flow to cause a mass to move and produce a percussive effect.” *See id.* at 7. The PDM causes the movable valve plate to rotate relative to the stationary plate, varying the fluid flow through the valve. *See id.* at 8. This variation in fluid flow creates varying fluid pressures on a separately provided movable mass causing the mass to move. *See id.*; *see also* ’294 Patent, Abstract.

NOV filed its Opening Claim Construction Brief (“Opening Brief”) [Doc. # 44], Amega filed its Responsive Claim Construction Brief (“Response Brief”) [Doc. # 47], and NOV filed its Reply Claim Construction Brief (“Reply Brief”) [Doc. # 48]. The

Court conducted a *Markman* hearing at which the parties presented evidence and argument regarding the proper construction of these terms. The Court found the parties' presentations, particularly their answers to the Court's questions, to be helpful. Thereafter, the parties submitted supplemental briefing on March 11, 2019. On April 16, 2019, counsel appeared before the Court and presented supplemental oral argument on the disputed "means-plus-function" claim term. On April 18, 2019, the parties submitted their agreement on the proper construction of part of the "means-plus-function" claim term. Based on the parties' agreements, the claim construction briefing, the full factual record, and the parties' presentations and arguments at the *Markman* hearings, the Court construes the disputed claim terms as follows.

## **II. GENERAL LEGAL STANDARDS FOR CLAIM CONSTRUCTION**

"It is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude." *Aventis Pharm., Inc. v. Amino Chems. Ltd.*, 715 F.3d 1363, 1373 (Fed. Cir. 2013) (quoting *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (*en banc*)). The patent claims in issue must be construed as a matter of law to determine their scope and meaning. *See, e.g., Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 390 (1996), *aff'd*, 52 F.3d 967, 976 (Fed. Cir.) (*en banc*); *Verizon Servs. Corp. v. Vonage Holdings Corp.*, 503 F.3d 1295, 1317 (Fed. Cir. 2007).

“There is a heavy presumption that claim terms are to be given their ordinary and customary meaning.” *Aventis*, 715 F.3d at 1373 (citing *Phillips*, 415 F.3d at 1312-13; *Vitronics Corp. v. Conceptiontronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)). Therefore, Courts must “look to the words of the claims themselves . . . to define the scope of the patented invention.” *Id.* (citations omitted); *see also Summit 6, LLC v. Samsung Elec. Co., Ltd.*, 802 F.3d 1283, 1290 (Fed. Cir. 2015). The “ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, *i.e.*, as of the effective filing date of the patent application.” *Phillips*, 415 F.3d at 1313; *see also ICU Med., Inc. v. Alaris Med. Sys., Inc.*, 558 F.3d 1368, 1374 (Fed. Cir. 2009). This “person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” *Phillips*, 415 F.3d at 1313; *ICU*, 558 F.3d at 1374.

Intrinsic evidence is the primary resource for claim construction. *See Power-One, Inc. v. Artesyn Techs., Inc.*, 599 F.3d 1343, 1348 (Fed. Cir. 2010) (citing *Phillips*, 415 F.3d at 1312). For certain claim terms, “the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words.”

*Phillips*, 415 F.3d at 1314. For other claim terms, however, the meaning of the claim language may be less apparent. To construe those terms, the Court considers “those sources available to the public that show what a person of skill in the art would have understood disputed claim language to mean . . . [including] the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art.” *Id.*

The claims “provide substantial guidance as to the meaning of particular claim terms.” *Id.* The Court may consider the context in which the terms are used and the differences among the claims. *See id.* “Because claim terms are normally used consistently throughout the patent, the usage of a term in one claim can often illuminate the meaning of the same term in other claims.” *Id.* Because the claims “are part of a fully integrated written instrument,” the Court may also consider the specification and the patent’s prosecution history. *Id.* at 1315, 1317. When the claims use separate terms, “each term is presumed to have a distinct meaning.” *Primos, Inc. v. Hunter’s Specialties, Inc.*, 451 F.3d 841, 847 (Fed. Cir. 2006).

The parties agree that one of the disputed claim terms is a “means-plus-function” term subject to special standards for claim construction. Those legal standards will be discussed in the section addressing the “means-plus-function” claim term at issue.

### **III. CONSTRUCTION OF DISPUTED CLAIM TERMS**

#### **A. Vary the Open Area of Said Port Between a Minimum Open Area and a Maximum Open Area**

Claims 11 and 13 of the '670 Patent are apparatus claims that include the claim term “vary the open area of said port between a maximum open area and a minimum open area.”<sup>3</sup> The parties agree that the claim term should be construed to mean “vary the alignment of the openings of the valve members between first and second states of alignment where one state of alignment is greater than the other.” The parties

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<sup>3</sup> Claim 11 of the '670 Patent describes:

The apparatus of Claim 1, wherein the valve includes first and second valve members each defining a respective axial flow opening and which openings are aligned to collectively define an open axial drilling fluid flow port through the valve, the first member being rotatable about a longitudinal axis of the housing to vary the alignment of the openings and thus vary the open area of said port between a minimum open area and a maximum open area to, in use, provide a varying flow therethrough and variation of the fluid pressure.

Claim 13 of the '670 Patent describes a:

Downhole flow pulsing apparatus comprising: a housing for location in a string, the housing defining a throughbore to permit passage of fluid therethrough; a valve located in the bore and including first and second valve members each defining a respective axial flow opening and which openings are aligned to collectively define an open axial drilling fluid flow port through the valve, the first member being rotatable about a longitudinal axis of the housing to vary the alignment of the openings and thus vary the open area of said port between a maximum open area and a minimum open area to, in use, provide a varying flow therethrough and variation of the fluid pressure; and a fluid actuated positive displacement motor operatively associated with the valve for driving the valve member.

dispute whether the claim term's construction should also require that "the openings of the valve members are always at least partially aligned."

The clear language of the claim term requires that the variance be between a maximum *open* area and a minimum *open* area. A "minimum open area" is an area that is minimally open, not closed. Therefore, the Court construes that claim term "vary the open area of said port between" a maximum open port and a minimum open port to mean to "vary the alignment of the openings of the valve members between the first and second states of alignment where one state of alignment is greater than the other and the openings of the valve members are always at least partially aligned such that the area is at least minimally open, not closed."

The Court's construction is supported by the prosecution history of the '670 Patent, during which the patentee distinguished the pending claims from prior art, specifically U.S. Patent No. 2,780,438 ("Bielstein"). In response to the Patent Examiner's rejection of then-pending claim 14 of the '670 Patent, the patentee stated that Bielstein's passageways were different because they "alternatively closed and opened," while claim 14 recites a "minimum open area." *See* Response, Evidentiary Appendix ("Appendix") [Doc. # 44-1], p. 218 (emphasis in original). The Examiner persisted in the rejection of the claim, and Plaintiff cancelled claim 14. The patentee did not, however, retract its position regarding Bielstein. Indeed, the patentee later, in a new application, again expressed its disagreement with the prior rejection of claim



14. *See* Second Preliminary Amendment (Remarks), Appendix p. 332. Arguments during patent prosecution that “draw distinctions between the patented invention and the prior art . . . indicate in the inventor’s own words what the invention is not.” *MBO Labs, Inc. v. Becton, Dickinson & Co.*, 474 F.3d 1323, 1330 (Fed. Cir. 2007). The patentee’s arguments during prosecution history distinguishing Bielstein indicate that the patented apparatus does not encompass a flow port that closes completely.

Plaintiff argues that when the patentees wanted to provide that the openings are always at least partially aligned, they “knew exactly how to do it.” *See* Opening Brief, p. 7. Plaintiff’s argument is based on Claim 8 of the ’317 Patent, which provides specifically that the “openings are always at least partially aligned.” *See* ’317 Patent, Cl. 8. Claim 8, on which Plaintiff’s argument is based, is not a claim of the ’670 Patent. Although the ’317 Patent is a divisional patent in the ’670 Patent family, the application for the ’317 Patent was not filed until August 2001. Therefore, language in Claim 8 of the ’317 Patent does not suggest what the patentee “knew exactly how to do” in May 1997, when the application for the ’670 Patent was filed. *Cf. Intellectual Ventures I LLC v. T-Mobile USA, Inc.*, 902 F.3d 1372, 1379 (Fed. Cir. 2018) (patentee could have used language from independent claim 19 to limit other claim in same patent); *Unwired Planet, LLC v. Apple Inc.*, 829 F.3d 1353, 1359 (Fed. Cir. 2016) (comparing language in different claims of same patent). In addition to containing language not included in the ’670 Patent, Claim 8 of the ’317 Patent is a

method claim, not an apparatus claim. On these bases, and in light of the clear language of the claim term in the '670 Patent and its prosecution history, the Court finds Plaintiff's reliance on Claim 8 of the '317 Patent unpersuasive.<sup>4</sup>

Based primarily on the clear language of the claim term, as well as on the prosecution history of the '670 Patent, the Court construes the claim term to require that the openings of the valve members are always at least partially aligned such that the area is at least minimally open, not closed.

### **B. Open Axial Drilling Fluid Flow Port**

Claims 11 and 13 of the '670 Patent are set forth above in footnote 3. Those two claims, and Claims 1 and 5 of the '317 Patent, are apparatus claims that contain the claim term "open axial drilling fluid flow port."<sup>5</sup> The parties agree that the claim

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<sup>4</sup> Amega argues that NOV's argument based on Claim 8 of the '317 Patent is one of "claim differentiation," which does not apply between independent claims. *See* Response Brief, pp. 10-11 (citing *Indacon, Inc. v. Facebook, Inc.*, 824 F.3d 1352, 1358 (Fed. Cir. 2016) and other cases). NOV has clarified that it is not asserting "claim differentiation" regarding Claim 8 of the '317 Patent. *See* Reply Brief, p. 5.

<sup>5</sup> Claim 1 of the '317 Patent describes a:

Flow pulsing apparatus for a drill string, the apparatus comprising: a housing for location in a drill string above a drill bit, the housing defining a throughbore to permit passage of drilling fluid therethrough; a valve located in the bore and including first and second valve members each defining a respective axial flow opening and which openings are aligned to collectively define an open axial drilling fluid flow port through the valve, the first member being rotatable about a longitudinal axis of the housing to vary the alignment of the openings between a first alignment in which the openings collectively define an

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term should be construed to mean “a bore extending along a longitudinal axis of the valve through which drilling fluid can pass.” The parties disagree whether the claim term should be construed to include “that is always at least partially open.” The Court construes the claim term to mean “a bore extending along a longitudinal axis of the valve through which drilling fluid can pass and that is always at least partially open.”

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<sup>5</sup> (...continued)

open axial flow port of a first open area and a second alignment in which the openings collectively define an open axial flow port of a second open area greater than said first open area to, in use, provide a varying flow therethrough and variation of the drilling fluid pressure, and drive means operatively associated with the valve for rotating the first member.

Claim 5 of the '317 Patent describes a:

Flow pulsing apparatus for drill string, the apparatus comprising: a housing for location in a drill string above a drill bit, the housing defining a throughbore to permit passage of drilling fluid therethrough; a valve located in the bore and including first and second valve members each defining a respective axial flow opening and which openings are aligned to collectively define an open axial drilling fluid flow port through the valve, the valve member openings being of similar shape such that when the openings are aligned the maximum flow area of the axial flow port corresponds to the area of each opening, the first member being rotatable about a longitudinal axis offset from a longitudinal axis of the second member such that rotation of the first member moves the openings between a first alignment in which the openings collectively define an open axial flow port of a first open area and a second alignment in which the openings collectively define an open axial flow port of a second open area greater than said first open area to, in use, provide a varying flow therethrough and variation of the drilling fluid pressure; and drive means operatively associated with the valve for rotating the first member.

The Court’s construction is based primarily on the clear language of the claim term – language that indicates that the port is an open one. It would have been simple to state that the axial drilling fluid flow port opens and closes, rather than define the port as an *open* axial drilling fluid flow port, but the patentee chose to identify the port as an open one. Additionally, Claim 1 of the ’670 Patent, for example, states that the openings “are aligned” – not that they “may align” – to collectively define an open axial drilling fluid flow port.

As discussed above in connection with the claim term “vary the open area of said port between a maximum open area and a minimum open area,” the same prosecution history supports the Court’s construction of the claim term “open axial drilling fluid flow port.” The patentee specifically distinguished Bielstein as having an axial drilling fluid flow port that “is alternatively closed and opened.” *See* Response, Appendix p. 218. The patentee, in the later application mentioned above, distinguished Bielstein as having ports that are axially misaligned at times and “do not define an open axial drilling fluid port.” *See* Second Preliminary Amendment (Remarks), Appendix p. 333.

Plaintiff relies on Claim 8 of the ’317 Patent also to support its position that the “axial drilling fluid flow port” need not always be at least partially open. As discussed above, Claim 8 of the ’317 Patent is a method claim, while Claims 1 and 5 of that Patent, as well as Claims 11 and 13 of the ’670 Patent, are apparatus claims.

Additionally, Claim 1 of the '317 Patent requires that there be two *open* areas, one *open* area greater than the other *open* area, such that there is a varying *flow* therethrough. *See* '317 Patent, Cl. 1. The Court finds the clear language of the claim term and the prosecution history strongly demonstrate that the “open axial drilling fluid flow port” is a port that is always open to some degree. The Court finds Plaintiff’s reliance on Claim 8 of the '317 Patent unpersuasive and an inadequate basis to overcome the claim language and the prosecution history.

Based primarily on the clear language of the claim term, as well as on the prosecution history, the Court construes this claim term to mean “a bore extending along a longitudinal axis of the valve through which drilling fluid can pass and that is always at least partially open.”

**C. Provide a Varying [Fluid] Flow Therethrough**

Claims 1, 11 and 13 of the '670 Patent, and Claims 1 and 5 of the '317 Patent, are apparatus claims that include the term “provide a varying [fluid] flow therethrough.”<sup>6</sup> The parties agree that the claim term should be construed to mean

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<sup>6</sup> Claim 1 of the '670 Patent describes a:

Downhole flow pulsing apparatus for providing a percussive effect, the apparatus comprising: a housing for location in a string, the housing defining a throughbore to permit passage of fluid therethrough; a valve located in the bore defining a flow passage and including a valve member, the valve member being movable to vary the area of the flow passage to, in use, provide a varying fluid flow therethrough; a fluid  
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“cause a fluid flow through the flow passage [port] of the valve that changes,” but Defendant argues that the construction should provide also that the fluid flow is “continuous.”

The Court finds nothing in the cited claim language, specifications, or prosecution history that requires that the flow be continuous. Indeed, during the prosecution of the '317 Patent, the patentee expressly acknowledged that Bielstein's valve, which opens and closes, provides a varying flow. *See* Second Preliminary Amendment, Appendix, p. 332. Although a continuous flow is likely to occur based on the Court's construction of the disputed claim terms “open axial drilling fluid flow port” and “vary the open area of said port between a minimum open area and a maximum open area,” the plain and ordinary meaning of the disputed language “provide a varying [fluid] flow therethrough” requires only that the flow varies or changes. As a result, the Court rejects the request to include “continuous” in the construction of this claim term.

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<sup>6</sup> (...continued)

actuated positive displacement motor operatively associated with the valve for driving the valve member; and a pressure responsive device which expands or retracts in response to the varying fluid pressure created by the varying fluid flow, the expansion or retraction providing a percussive effect.

**D. Means Associated With the Mass for Creating a Fluid Pressure Force on Said Mass**

Asserted Claims 4 and 17 of the '294 Patent are dependent on independent Claim 1 of the '294 Patent.<sup>7</sup> The parties agree that the disputed claim term “means associated with the mass for creating a fluid pressure force on the mass” in Claim 1 is a means-plus-function claim term under 35 U.S.C. § 112(f).<sup>8</sup> “In enacting this provision, Congress struck a balance in allowing patentees to express a claim limitation by reciting a function to be performed rather than by reciting structure for performing that function, while placing specific constraints on how such a limitation is to be construed, namely, by restricting the scope of coverage to only the structure, materials, or acts described in the specification as corresponding to the claimed function and equivalents thereof.” *Williamson v. Citrix Online, LLC*, 792 F.3d 1339,

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<sup>7</sup> Claim 1 of the '294 Patent describes:

A percussion drill comprising a fluid transmitting body; a drill bit support coupled to the body; a mass movable relative to the body for impacting on the drill bit support; means associated with the mass for creating a fluid pressure force on said mass; a rotating valve located in the body for controlling flow of fluid through the body to produce a varying fluid pressure force on the mass and induce acceleration of the mass; and a valve motor for driving said valve.

<sup>8</sup> Title 35, United States Code, § 112(f) provides:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

1347-48 (Fed. Cir. 2015) (citing *Northrop Grumman Corp. v. Intel Corp.*, 325 F.3d 1346, 1350 (Fed. Cir. 2003)).

Construing means-plus-function claim terms follows a two-step process. First, the Court must identify the claimed function. *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1351 (Fed. Cir. 2015). In this case, the parties agree that the function is “creating a fluid pressure force on said mass.”

Second, the Court must identify the corresponding structure in the patent specification that performs the function. *See Noah Sys., Inc. v. Intuit Inc.*, 675 F.3d 1302, 1311 (Fed. Cir. 2012); *Omega Eng’g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1330 (Fed. Cir. 2003). The corresponding structure must be “capable of performing the claimed function.” *Univ. of Pittsburgh of Commonwealth Sys. of Higher Educ. v. Varian Med. Sys., Inc.*, 561 F. App’x 934, 951 (Fed. Cir. 2014) (citing *Default Proof Credit Card Sys., Inc. v. Home Depot U.S.A., Inc.*, 412 F.3d 1291, 1298 (Fed. Cir. 2005); *Budde v. Harley-Davidson, Inc.*, 250 F.3d 1369, 1379 (Fed. Cir. 2001)). “Structure disclosed in the specification is ‘corresponding’ structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim.” *Medtronic, Inc. v. Advanced Cardiovascular Sys., Inc.*, 248 F.3d 1303, 1311 (Fed. Cir. 2001) (quoting *B. Braun Med., Inc. v. Abbott Labs*, 124 F.3d 1419, 1424 (Fed. Cir. 1997)). Additionally, the scope of a means-plus-function limitation “does not extend to all means for performing a certain function”



but is, instead, “sharply limited to the structure disclosed in the specification and its equivalents.” *J&M Corp. v. Harley-Davidson, Inc.*, 269 F.3d 1360, 1367 (Fed. Cir. 2001); *see also Mettler-Toledo, Inc. v. B-Tek Scales, LLC*, 671 F.3d 1291, 1296 (Fed. Cir. 2012); *Bennett Marine, Inc. v. Lenco Marine, Inc.*, 549 F. App’x 947, 954 (Fed. Cir. Sept. 19, 2013).

Generally, the corresponding structures for creating a fluid pressure force on the mass are the structures and surfaces associated with the mass that produce a fluid pressure force when pressurized fluid flows through the fluid transmitting body to create a pressure differential across the structures and/or surfaces. The specific surface areas that constitute the corresponding structures for the means-plus-function claim term in the ’294 Patent differ for Figure 1 and for Figures 2 and 3.

For Figure 1, the corresponding structures are the surface areas of the rotating valve that are exposed to the pressurized fluid and the surface areas of the mass that are exposed to pressurized fluid. The corresponding structures are not limited to the upper end of the mass. The corresponding structure must be capable of creating a fluid pressure *force* on the mass. As noted by the Patent Trial and Appeal Board (“PTAB”) in its Final Written Decision, for Figure 1, “valve 32 restricts the flow of drilling fluid through fluid transmitting body 14.” *See* PTAB Decision, Appendix at 378-79. “This restriction produces a pressure differential across valve 32 and creates an unbalanced force across the top of mass 28, causing mass 28 to move down . . .”

*Id.* at 379. Therefore, it is the pressure differential between the upward facing areas (or top) of the valve and the mass and the downward facing areas of the mass that creates the fluid pressure **force** that causes the mass to move. *See id.* at 386.

The Court recognizes that the PTAB’s decision is not binding. *See Rembrandt Wireless Techs., LP v. Samsung Elecs. Co., Inc.*, 853 F.3d 1370, 1377 (Fed. Cir. 2017). Courts in this circuit, however, often give the PTAB decision “reasoned deference.” *See, e.g., Ilife Techs., Inc. v. Nintendo of Am., Inc.*, 2017 WL 525708, \*4 (N.D. Tex. Feb. 9, 2017). Other district courts treat the PTAB decision as intrinsic evidence. *See, e.g., Fairfield Indus., Inv. v. Wireless Seismic, Inc.*, 2015 WL 1034275, \*5 (S.D. Tex. Mar. 10, 2015). Whether the PTAB decision is entitled to deference or simply considered intrinsic evidence, the Court finds it instructive in this case.

For Figures 2 and 3 of the ’294 Patent, the parties dispute whether the rotating valve is part of the corresponding structure. The Court concludes that it is not. Plaintiff is correct that alteration of the flow of drilling fluid through the rotating valve alters the drilling fluid pressure force. *See, e.g., ’294 Patent*, Abstract. Asserted Claim 4 of the ’294 Patent identifies a percussion drill as described in Claim 1<sup>9</sup> “wherein said rotating valve is provided ***separately of the means*** for creating a fluid pressure force on said mass.” *See ’294 Patent*, Cl. 4 (emphasis added). The limitation in Claim 4, the asserted claim, that the rotating valve is “separate[] of the means”

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<sup>9</sup> Claim 1 of the ’294 Patent has been invalidated as unpatentable under 35 U.S.C. § 103(a). *See PTAB Decision*, Appendix p. 420.

establishes that the rotating valve is not “associated with the mass” for purposes of the asserted claim. Therefore, the rotating valve is not part of the corresponding structure for the claim element, a “*means associated with the mass* for creating a fluid pressure force on said mass.”

The parties also dispute whether the “flow restricting nozzle” in Figures 2 and 3 is part of the corresponding structure. It is clear that the nozzle in Figures 2 and 3 is associated with the mass. The nozzle is embedded in the mass, much like the rotating valve’s position in Figure 1. Further, the nozzle creates a pressure drop through the nozzle, and thus across the mass, thereby creating a fluid pressure force on the mass. Indeed, in the Detailed Description of the Invention section of the ’294 Patent, Figure 2 is described as having a “nozzle **74** to restrict fluid flow through the bore **72** and create a pressure drop across the mass **62**.” *See* ’294 Patent, 4:16-17. Similarly, with reference to Figure 3, the Detailed Description identifies a pressure drop “across the nozzle **94**” that forces the mass downwards. *See id.*, 4:41-42.

For Figures 2 and 3, the Detailed Description clearly links the nozzle to the identified function because the pressure drop across the nozzle creates the fluid pressure force on the mass. Therefore, the flow restricting nozzle (element 74 in Figure 2 and 94 in Figure 3) is a part of the corresponding structure for Figures 2 and 3.

Based on the foregoing, the Court construes the means-plus-function claim term to mean:

The corresponding structures are the structures and surfaces associated with the mass that produce a fluid pressure force when pressurized fluid flows through the fluid transmitting body to create a pressure differential across the structures and/or surfaces.

A. For the embodiment of Figure 1 of the '294 Patent, the surface areas that are subject to fluid pressure are: (i) the surfaces of the rotating valve (32) that are exposed to the pressurized fluid and (ii) the surfaces of the mass (28) that are exposed to pressurized fluid; and

B. For the embodiments of Figures 2 and 3 of the '294 Patent, the structures or surface areas associated with the mass that are subject to fluid pressure are (1) the surfaces of the flow restricting nozzle (74/94) that are exposed to pressurized fluid, and (2) the surfaces of the mass (62/92) that are exposed to the pressurized fluid.

#### IV. CONCLUSION


The Court has considered the intrinsic evidence in the record, as well as limited extrinsic evidence as cited herein. The Court also has considered the parties' claim construction briefing, and the oral arguments and explanations during the *Markman* hearings, which the Court found very helpful and informative. Based on this consideration of the evidence and the parties' arguments, as well as the application of governing claim construction principles, the Court construes the disputed terms in the Patents-in-Suit as set forth above and in the chart below.

<i><b>Claim Term</b></i>	<i><b>Court's Construction</b></i>
Vary the Open Area of Said Port Between a Minimum Open Area and a Maximum Open Area	Vary the alignment of the openings of the valve members between the first and second states of alignment where one state of alignment is greater than the other and the openings of the valve members are always at least partially aligned such that the area is at least minimally open, not closed
Open Axial Drilling Fluid Flow Port	A bore extending along a longitudinal axis of the valve through which drilling fluid can pass and that is always at least partially open
Provide a Varying [Fluid] Flow Therethrough	Cause a fluid flow through the flow passage [port] of the valve that changes

<p>Means Associated with the Mass for Creating a Fluid Pressure Force on Said Mass</p>	<p>Specified Function: Creating a fluid pressure force on said mass</p> <p>Corresponding Structure: The corresponding structures are the structures and surfaces associated with the mass that produce a fluid pressure force when pressurized fluid flows through the fluid transmitting body to create a pressure differential across the structures and/or surfaces.</p> <p>A. For the embodiment of Figure 1 of the '294 Patent, the surface areas that are subject to fluid pressure are: (i) the surfaces of the rotating valve (32) that are exposed to the pressurized fluid and (ii) the surfaces of the mass (28) that are exposed to pressurized fluid; and</p> <p>B. For the embodiments of Figures 2 and 3 of the '294 Patent, the structures or surface areas associated with the mass that are subject to fluid pressure are (1) the surfaces of the flow restricting nozzle (74/94) that are exposed to pressurized fluid, and (2) the surfaces of the mass (62/92) that are exposed to the pressurized fluid.</p>
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It is **SO ORDERED**.

SIGNED at Houston, Texas, this **24th** day of **April, 2019**.

  
 NANCY F. ATLAS  
 SENIOR UNITED STATES DISTRICT JUDGE